

10/530217**JCO6 Rec'd PCT/PTO 30 MAR 2005**

SEQUENCE LISTING

<110> ONCOTHERAPY SCIENCE, INC.

JAPAN AS REPRESENTED BY THE PRESIDENT OF THE UNIVERSITY OF TOKYO

<120> GENES AND POLYPEPTIDES RELATING TO HUMAN MYELOID LEUKEMIA

<130> ONC-A0213P2

<150> US 60/414,867

<151> 2002-09-30

<160> 16

<170> PatentIn version 3.1

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cggaattccg atgagtgagg cccgcagg

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gtacgtgcag caggagaac

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gaagcagcac gacttcttc

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Met Ser

1

gag gcc cgc agg gac agc acg agc agc ctg cag cgc aag aag cca ccc 164

Glu Ala Arg Arg Asp Ser Thr Ser Ser Leu Gln Arg Lys Lys Pro Pro

5

10

15

tgg cta aag ctg gac att ccc tct gcg gtg ccc ctg acg gca gaa gag 212

Trp Leu Lys Leu Asp Ile Pro Ser Ala Val Pro Leu Thr Ala Glu Glu

20

25

30

ccc agc ttc ctg cag ccc ctg agg cga cag gct ttc ctg agg agt gtg 260
Pro Ser Phe Leu Gln Pro Leu Arg Arg Gln Ala Phe Leu Arg Ser Val
35 40 45 50

agt atg cca gcc gag aca gcc cac atc tct tca ccc cac cat gag ctc 308
Ser Met Pro Ala Glu Thr Ala His Ile Ser Ser Pro His His Glu Leu
55 60 65

cgg cgg ccg gtg ctg caa cgc cag acg tcc atc aca cag acc atc cgc 356
Arg Arg Pro Val Leu Gln Arg Gln Thr Ser Ile Thr Gln Thr Ile Arg
70 75 80

agg ggg acc gcc gac tgg ttt gga gtg agc aag gac agt gac agc acc 404
Arg Gly Thr Ala Asp Trp Phe Gly Val Ser Lys Asp Ser Asp Ser Thr
85 90 95

cag aaa tgg cag cgc aag agc atc cgt cac tgc agc cag cgc tac ggg 452
Gln Lys Trp Gln Arg Lys Ser Ile Arg His Cys Ser Gln Arg Tyr Gly
100 105 110

aag ctg aag ccc cag gtc ctc cgg gag ctg gac ctg ccc agc cag gac 500
Lys Leu Lys Pro Gln Val Leu Arg Glu Leu Asp Leu Pro Ser Gln Asp
115 120 125 130

aac gtg tcg ctg acc agc acc gag acg cca ccc cca ctc tac gtg ggg 548

Asn Val Ser Leu Thr Ser Thr Glu Thr Pro Pro Pro Leu Tyr Val Gly

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cca tgc cag ctg ggc atg cag aag atc ata gac ccc ctg gcc cgt ggc 596

Pro Cys Gln Leu Gly Met Gln Lys Ile Ile Asp Pro Leu Ala Arg Gly

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155

160

cgt gcc ttc cgt gtg gca gat gac act gcg gaa ggc ctg agt gcc cca 644

Arg Ala Phe Arg Val Ala Asp Asp Thr Ala Glu Gly Leu Ser Ala Pro

165

170

175

cac act ccc gtc acg ccg ggt gct gcc tcc ctc tgc tcc ttc tcc agc 692

His Thr Pro Val Thr Pro Gly Ala Ala Ser Leu Cys Ser Phe Ser Ser

180

185

190

tcc cgc tca ggt ttc cac cgg ctc ccg cgg cgg cgc aag cga gag tgc 740

Ser Arg Ser Gly Phe His Arg Leu Pro Arg Arg Arg Lys Arg Glu Ser

195

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gtg gcc aag atg agc ttc cgg gcg gcc gca gcg ctg atg aaa ggc cgc 788

Val Ala Lys Met Ser Phe Arg Ala Ala Ala Ala Leu Met Lys Gly Arg

215

220

225

tcc gtt agg gat ggc acc ttt cgc cgg gca cgg cgt cga agc ttc act 836

Ser Val Arg Asp Gly Thr Phe Arg Arg Ala Arg Arg Arg Ser Phe Thr

230

235

240

cca gct agc ttt ctg gag gag gac aca act gat ttc ccc gat gag ctg	884
Pro Ala Ser Phe Leu Glu Glu Asp Thr Thr Asp Phe Pro Asp Glu Leu	
245 250 255	
gac aca tcc ttc ttt gcc cgg gaa ggt atc ctc cat gaa gag ctg tcc	932
Asp Thr Ser Phe Phe Ala Arg Glu Gly Ile Leu His Glu Glu Leu Ser	
260 265 270	
aca tac ccg gat gaa gtt ttc gag tcc cca tcg gag gca gcg cta aag	980
Thr Tyr Pro Asp Glu Val Phe Glu Ser Pro Ser Glu Ala Ala Leu Lys	
275 280 285 290	
gac tgg gag aag gca ccg gag cag gcg gac ctc acc ggc ggg gcc ctg	1028
Asp Trp Glu Lys Ala Pro Glu Gln Ala Asp Leu Thr Gly Gly Ala Leu	
295 300 305	
gac cgc agc gag ctt gag cgc agc cac ctg atg ctg ccc ttg gag cga	1076
Asp Arg Ser Glu Leu Glu Arg Ser His Leu Met Leu Pro Leu Glu Arg	
310 315 320	
ggc tgg cgg aag cag aag gag ggc gcc gca gcc ccg cag ccc aag gtg	1124
Gly Trp Arg Lys Gln Lys Glu Gly Ala Ala Ala Pro Gln Pro Lys Val	
325 330 335	
cgg ctc cga cag gag gtg gtg agc acc gcg ggg ccg cga cgg ggc cag	1172

Arg Leu Arg Gln Glu Val Val Ser Thr Ala Gly Pro Arg Arg Gly Gln

340

345

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cgt atc gcg gtg ccg gtg cgc aag ctc ttc gcc cgg gag aag cgg ccg 1220

Arg Ile Ala Val Pro Val Arg Lys Leu Phe Ala Arg Glu Lys Arg Pro

355

360

365

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tat ggg ctg ggc atg gtg gga cgg ctc acc aac cgc acc tac cgc aag 1268

Tyr Gly Leu Gly Met Val Gly Arg Leu Thr Asn Arg Thr Tyr Arg Lys

375

380

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cgc atc gac agc ttc gtc aag cgc cag atc gag gac atg gac gac cac 1316

Arg Ile Asp Ser Phe Val Lys Arg Gln Ile Glu Asp Met Asp Asp His

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agg ccc ttc ttc acc tac tgg ctt acc ttc gtg cac tcg ctc gtc acc 1364

Arg Pro Phe Phe Thr Tyr Trp Leu Thr Phe Val His Ser Leu Val Thr

405

410

415

atc cta gcc gtg tgc atc tat ggc atc gcg ccc gtg ggc ttc tcg cag 1412

Ile Leu Ala Val Cys Ile Tyr Gly Ile Ala Pro Val Gly Phe Ser Gln

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425

430

cat gag acg gtg gac tcg gtg ctg cgg aac cgc ggg gtc tac gag aac 1460

His Glu Thr Val Asp Ser Val Leu Arg Asn Arg Gly Val Tyr Glu Asn

435

440

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450

gtc aag tac gtg cag cag gag aac ttc tgg atc ggg ccc agc tcg gag 1508
Val Lys Tyr Val Gln Gln Glu Asn Phe Trp Ile Gly Pro Ser Ser Glu
455 460 465

gcc ctc atc cac ctg ggc gcc aag ttt tcg ccc tgc atg cgc cag gac 1556
Ala Leu Ile His Leu Gly Ala Lys Phe Ser Pro Cys Met Arg Gln Asp
470 475 480

ccg cag gtg cac agc ttc att cgc tcg gcg cgc gag cgc gag aag cac 1604
Pro Gln Val His Ser Phe Ile Arg Ser Ala Arg Glu Arg Glu Lys His
485 490 495

tcc gcc tgc tgc gtg cgc aac gac agg tcg ggc tgc gtg cag acc tcg 1652
Ser Ala Cys Cys Val Arg Asn Asp Arg Ser Gly Cys Val Gln Thr Ser
500 505 510

gag gag gag tgc tcg tcc acg ctg gca gtg tgg gtg aag tgg ccc atc 1700
Glu Glu Glu Cys Ser Ser Thr Leu Ala Val Trp Val Lys Trp Pro Ile
515 520 525 530

cat ccc agc gcc cca gag ctt gcg ggc cac aag aga cag ttt ggc tct 1748
His Pro Ser Ala Pro Glu Leu Ala Gly His Lys Arg Gln Phe Gly Ser
535 540 545

gtc tgc cac cag gat ccc agg gtg tgt gat gag ccc tcc tcc gaa gac 1796

Val Cys His Gln Asp Pro Arg Val Cys Asp Glu Pro Ser Ser Glu Asp

550

555

560

cct cat gag tgg cca gaa gac atc acc aag tgg ccg atc tgc acc aaa

1844

Pro His Glu Trp Pro Glu Asp Ile Thr Lys Trp Pro Ile Cys Thr Lys

565

570

575

aac agc gct ggg aac cac acc aac cat ccc cac atg gac tgt gtc atc

1892

Asn Ser Ala Gly Asn His Thr Asn His Pro His Met Asp Cys Val Ile

580

585

590

aca gga cgg ccc tgc tgc att ggc acc aag ggc agg tgt gag atc acc

1940

Thr Gly Arg Pro Cys Cys Ile Gly Thr Lys Gly Arg Cys Glu Ile Thr

595

600

605

610

tcc cgg gag tac tgt gac ttc atg agg ggc tac ttc cat gag gag gcc

1988

Ser Arg Glu Tyr Cys Asp Phe Met Arg Gly Tyr Phe His Glu Glu Ala

615

620

625

acg ctc tgc tct cag gtg cac tgc atg gat gat gtg tgt ggg ctc ctg

2036

Thr Leu Cys Ser Gln Val His Cys Met Asp Asp Val Cys Gly Leu Leu

630

635

640

cct ttt ctc aac ccc gag gtg cct gac cag ttc tac cgc ctg tgg cta

2084

Pro Phe Leu Asn Pro Glu Val Pro Asp Gln Phe Tyr Arg Leu Trp Leu

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650

655

tcc ctc ttc ctg cac gcc ggg atc ttg cac tgc ctg gtg tcc atc tgc 2132
Ser Leu Phe Leu His Ala Gly Ile Leu His Cys Leu Val Ser Ile Cys
660 665 670

ttc cag atg act gtc ctg cgg gac ctg gag aag ctg gca ggc tgg cac 2180
Phe Gln Met Thr Val Leu Arg Asp Leu Glu Lys Leu Ala Gly Trp His
675 680 685 690

cgc ata gcc atc atc tac ctg ctg agt ggt gtc acc ggc aac ctg gcc 2228
Arg Ile Ala Ile Ile Tyr Leu Leu Ser Gly Val Thr Gly Asn Leu Ala
695 700 705

agt gcc atc ttc ctg cca tac cga gca gag gtg ggt cct gct ggc tcc 2276
Ser Ala Ile Phe Leu Pro Tyr Arg Ala Glu Val Gly Pro Ala Gly Ser
710 715 720

cag ttc ggc atc ctg gcc tgc ctc ttc gtg gag ctc ttc cag agc tgg 2324
Gln Phe Gly Ile Leu Ala Cys Leu Phe Val Glu Leu Phe Gln Ser Trp
725 730 735

cag atc ctg gcg cgg ccc tgg cgt gcc ttc ttc aag ctg ctg gct gtg 2372
Gln Ile Leu Ala Arg Pro Trp Arg Ala Phe Phe Lys Leu Leu Ala Val
740 745 750

gtg ctc ttc ctc ttc acc ttt ggg ctg ctg ccg tgg att gac aac ttt 2420

Val Leu Phe Leu Phe Thr Phe Gly Leu Leu Pro Trp Ile Asp Asn Phe
 755 760 765 770

gcc cac atc tcg ggg ttc atc agt ggc ctc ttc ctc tcc ttc gcc ttc 2468
 Ala His Ile Ser Gly Phe Ile Ser Gly Leu Phe Leu Ser Phe Ala Phe
 775 780 785

ttg ccc tac atc agc ttt ggc aag ttc gac ctg tac cgg aaa cgc tgc 2516
 Leu Pro Tyr Ile Ser Phe Gly Lys Phe Asp Leu Tyr Arg Lys Arg Cys
 790 795 800

cag atc atc atc ttt cag gtg gtc ttc ctg ggc ctc ctg gct ggc ctg 2564
 Gln Ile Ile Ile Phe Gln Val Val Phe Leu Gly Leu Leu Ala Gly Leu
 805 810 815

gtg gtc ctc ttc tac gtc tat cct gtc cgc tgt gag tgg tgt gag ttc 2612
 Val Val Leu Phe Tyr Val Tyr Pro Val Arg Cys Glu Trp Cys Glu Phe
 820 825 830

ctc acc tgc atc ccc ttc act gac aag ttc tgt gag aag tac gaa ctg 2660
 Leu Thr Cys Ile Pro Phe Thr Asp Lys Phe Cys Glu Lys Tyr Glu Leu
 835 840 845 850

gac gct cag ctc cac tga gctggctgcg ggctccagcg gccgtgtgct 2708
 Asp Ala Gln Leu His
 855

ccagcaggcc agagccagac acgacctccc tgacctcac aggcttacag gagtcacctg 2768

ctccatgtgg ggactggcct gtttcctgaa cacagacctc tttcttgtgc cttgttcaact 2828

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<213> Homo sapiens

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Met Ser Glu Ala Arg Arg Asp Ser Thr Ser Ser Leu Gln Arg Lys Lys

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Pro Pro Trp Leu Lys Leu Asp Ile Pro Ser Ala Val Pro Leu Thr Ala

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Glu Glu Pro Ser Phe Leu Gln Pro Leu Arg Arg Gln Ala Phe Leu Arg

35 40 45

Ser Val Ser Met Pro Ala Glu Thr Ala His Ile Ser Ser Pro His His

50

55

60

Glu Leu Arg Arg Pro Val Leu Gln Arg Gln Thr Ser Ile Thr Gln Thr

65

70

75

80

Ile Arg Arg Gly Thr Ala Asp Trp Phe Gly Val Ser Lys Asp Ser Asp

85

90

95

Ser Thr Gln Lys Trp Gln Arg Lys Ser Ile Arg His Cys Ser Gln Arg

100

105

110

Tyr Gly Lys Leu Lys Pro Gln Val Leu Arg Glu Leu Asp Leu Pro Ser

115

120

125

Gln Asp Asn Val Ser Leu Thr Ser Thr Glu Thr Pro Pro Pro Leu Tyr

130

135

140

Val Gly Pro Cys Gln Leu Gly Met Gln Lys Ile Ile Asp Pro Leu Ala

145

150

155

160

Arg Gly Arg Ala Phe Arg Val Ala Asp Asp Thr Ala Glu Gly Leu Ser

165

170

175

Ala Pro His Thr Pro Val Thr Pro Gly Ala Ala Ser Leu Cys Ser Phe

180 185 190

Ser Ser Ser Arg Ser Gly Phe His Arg Leu Pro Arg Arg Arg Lys Arg

195 200 205

Glu Ser Val Ala Lys Met Ser Phe Arg Ala Ala Ala Ala Leu Met Lys

210 215 220

Gly Arg Ser Val Arg Asp Gly Thr Phe Arg Arg Ala Arg Arg Arg Ser

225 230 235 240

Phe Thr Pro Ala Ser Phe Leu Glu Glu Asp Thr Thr Asp Phe Pro Asp

245 250 255

Glu Leu Asp Thr Ser Phe Phe Ala Arg Glu Gly Ile Leu His Glu Glu

260 265 270

Leu Ser Thr Tyr Pro Asp Glu Val Phe Glu Ser Pro Ser Glu Ala Ala

275 280 285

Leu Lys Asp Trp Glu Lys Ala Pro Glu Gln Ala Asp Leu Thr Gly Gly

290 295 300

Ala Leu Asp Arg Ser Glu Leu Glu Arg Ser His Leu Met Leu Pro Leu

305 310 315 320

Glu Arg Gly Trp Arg Lys Gln Lys Glu Gly Ala Ala Ala Pro Gln Pro

325

330

335

Lys Val Arg Leu Arg Gln Glu Val Val Ser Thr Ala Gly Pro Arg Arg

340

345

350

Gly Gln Arg Ile Ala Val Pro Val Arg Lys Leu Phe Ala Arg Glu Lys

355

360

365

Arg Pro Tyr Gly Leu Gly Met Val Gly Arg Leu Thr Asn Arg Thr Tyr

370

375

380

Arg Lys Arg Ile Asp Ser Phe Val Lys Arg Gln Ile Glu Asp Met Asp

385

390

395

400

Asp His Arg Pro Phe Phe Thr Tyr Trp Leu Thr Phe Val His Ser Leu

405

410

415

Val Thr Ile Leu Ala Val Cys Ile Tyr Gly Ile Ala Pro Val Gly Phe

420

425

430

Ser Gln His Glu Thr Val Asp Ser Val Leu Arg Asn Arg Gly Val Tyr

435

440

445

Glu Asn Val Lys Tyr Val Gln Gln Glu Asn Phe Trp Ile Gly Pro Ser

450

455

460

Ser Glu Ala Leu Ile His Leu Gly Ala Lys Phe Ser Pro Cys Met Arg

465

470

475

480

Gln Asp Pro Gln Val His Ser Phe Ile Arg Ser Ala Arg Glu Arg Glu

485

490

495

Lys His Ser Ala Cys Cys Val Arg Asn Asp Arg Ser Gly Cys Val Gln

500

505

510

Thr Ser Glu Glu Glu Cys Ser Ser Thr Leu Ala Val Trp Val Lys Trp

515

520

525

Pro Ile His Pro Ser Ala Pro Glu Leu Ala Gly His Lys Arg Gln Phe

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540

Gly Ser Val Cys His Gln Asp Pro Arg Val Cys Asp Glu Pro Ser Ser

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555

560

Glu Asp Pro His Glu Trp Pro Glu Asp Ile Thr Lys Trp Pro Ile Cys

565

570

575

Thr Lys Asn Ser Ala Gly Asn His Thr Asn His Pro His Met Asp Cys

580

585

590

Val Ile Thr Gly Arg Pro Cys Cys Ile Gly Thr Lys Gly Arg Cys Glu

595

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Ile Thr Ser Arg Glu Tyr Cys Asp Phe Met Arg Gly Tyr Phe His Glu

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615

620

Glu Ala Thr Leu Cys Ser Gln Val His Cys Met Asp Asp Val Cys Gly

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635

640

Leu Leu Pro Phe Leu Asn Pro Glu Val Pro Asp Gln Phe Tyr Arg Leu

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650

655

Trp Leu Ser Leu Phe Leu His Ala Gly Ile Leu His Cys Leu Val Ser

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670

Ile Cys Phe Gln Met Thr Val Leu Arg Asp Leu Glu Lys Leu Ala Gly

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685

Trp His Arg Ile Ala Ile Ile Tyr Leu Leu Ser Gly Val Thr Gly Asn

690

695

700

Leu Ala Ser Ala Ile Phe Leu Pro Tyr Arg Ala Glu Val Gly Pro Ala

705

710

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Gly Ser Gln Phe Gly Ile Leu Ala Cys Leu Phe Val Glu Leu Phe Gln

725

730

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Ser Trp Gln Ile Leu Ala Arg Pro Trp Arg Ala Phe Phe Lys Leu Leu

740

745

750

Ala Val Val Leu Phe Leu Phe Thr Phe Gly Leu Leu Pro Trp Ile Asp

755

760

765

Asn Phe Ala His Ile Ser Gly Phe Ile Ser Gly Leu Phe Leu Ser Phe

770

775

780

Ala Phe Leu Pro Tyr Ile Ser Phe Gly Lys Phe Asp Leu Tyr Arg Lys

785

790

795

800

Arg Cys Gln Ile Ile Ile Phe Gln Val Val Phe Leu Gly Leu Leu Ala

805

810

815

Gly Leu Val Val Leu Phe Tyr Val Tyr Pro Val Arg Cys Glu Trp Cys

820

825

830

Glu Phe Leu Thr Cys Ile Pro Phe Thr Asp Lys Phe Cys Glu Lys Tyr

835

840

845

Glu Leu Asp Ala Gln Leu His

850

855